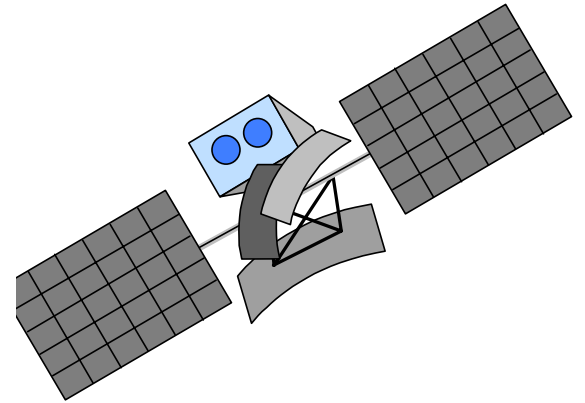
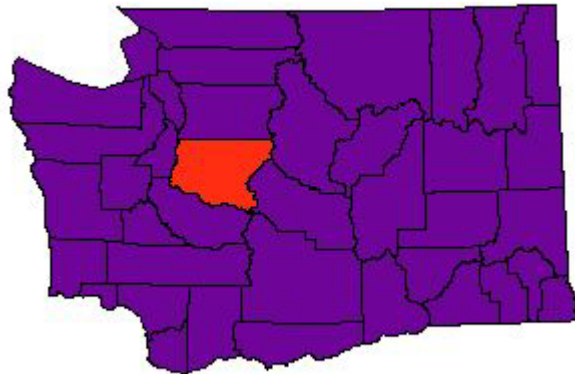
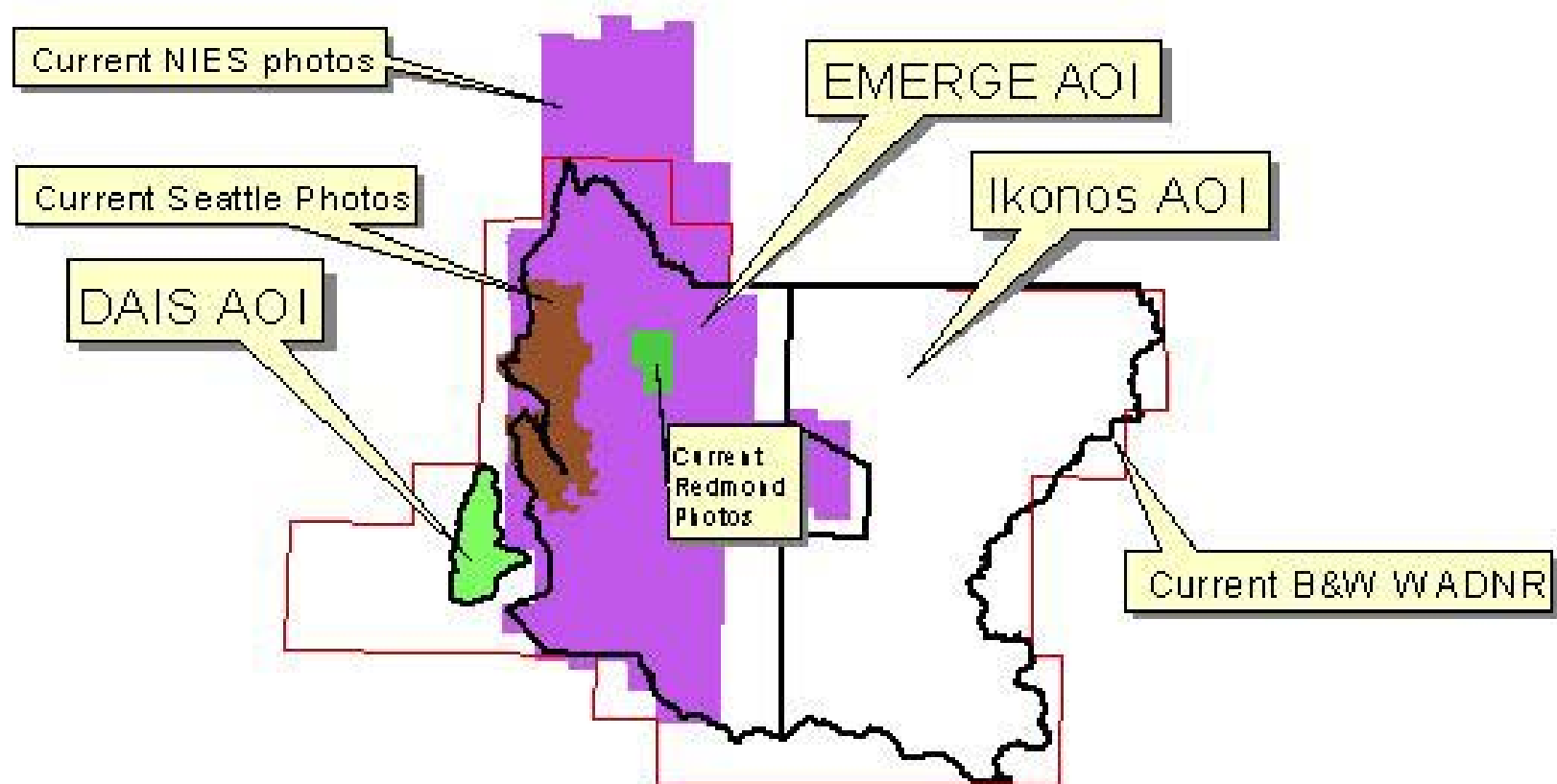


KING COUNTY

Multispectral Image Acquisition

Over 2200 square miles of
multispectral imagery collected
during 2000





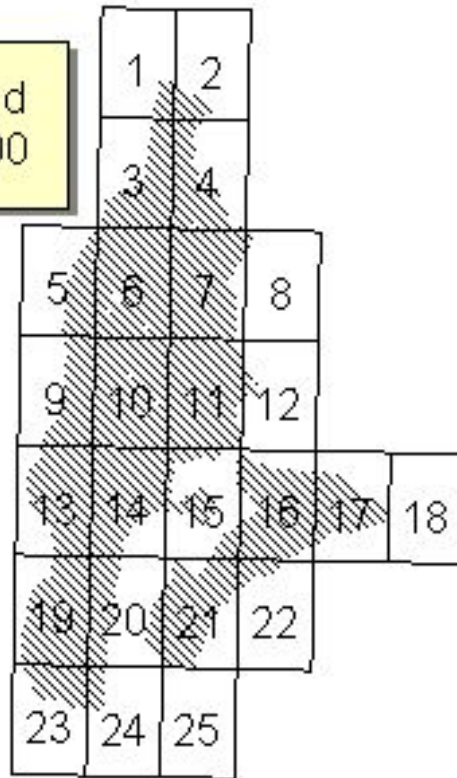
Comparison of Coverage for Existing Digital Orthophotography and
New Multispectral Imagery

Three separate image datasets collected that cover the entirety of King County

Data Set Comparison

DataSet	Source	GSD	Dynamic Range	Bands	Coverage	Acquisition Dates	Horiz. Accuracy
DAIS (Digital Airborne Image System)	Space Imaging Aerial Sensor	0.5 meter	12 bit	4 band CIR <i>Blue</i> <i>Green</i> <i>Red</i> <i>NIR</i>	Vashon Island	September 2000	1:10000 NMAS, CE90 4 m
Emerge	Emerge Corp. Aerial Sensor	2.0 foot	8 bit	3 band CIR <i>Green</i> <i>Red</i> <i>NIR</i>	Western King County and SW Snohomish	May through September 2000	1:10000 NMAS, CE90 4m
Ikonos	Space Imaging Satellite Sensor	4.0 meter multispectral, 1.0 meter pan	11 bit	4 band CIR <i>Blue</i> <i>Green</i> <i>Red</i> <i>NIR</i>	Eastern King County	August through October 2000	1:24000 NMAS, CE90 12 meters, RMSE 5.7 m

All data captured
on Sept 12, 2000

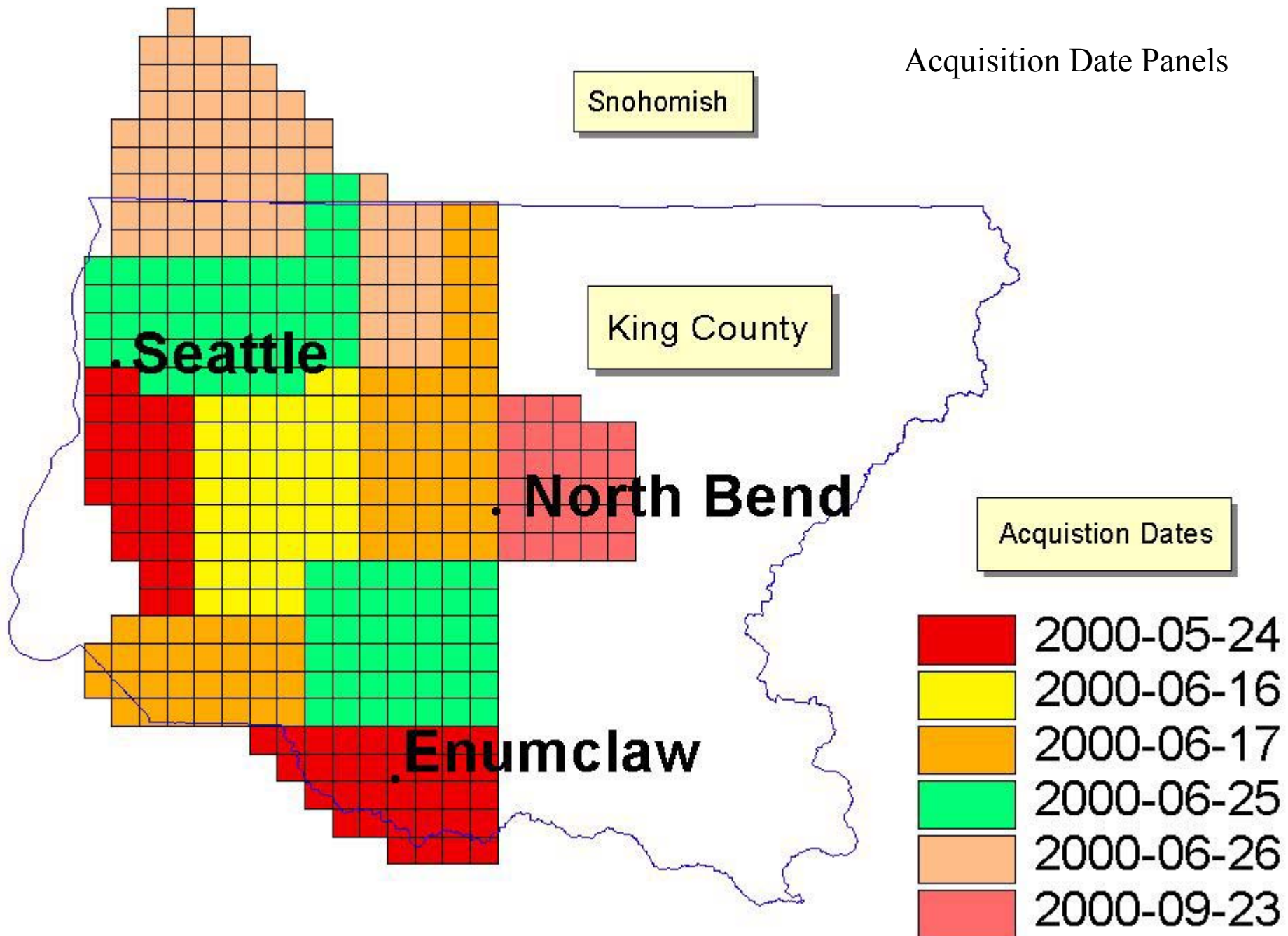


- Representative MS NIR example of tiles 5 and 6

- Approximately 51 square miles in 25 tiles
- Average area of each tile is 3.1 square miles
- Overall size of dataset is about 6.5 gb.
- Imagery in TIFF format
- MS 12 bit data viewable in present format only through ERDAS or ArcView Image Analyst (Bug in GeoTiff specification causes misprojection. Plans to convert to img format for 12 bit multispectral)
- 8-Bit natural color (red,green,blue) TIFF and False Color NIR (red,green,NIR) TIFF viewable in ArcView/ArcInfo without any non-standard extensions

EMERGE

Acquisition Date Panels



EMERGE

Snohomish

King County

Seattle

North Bend

Enumclaw

Emerge Aerial
Photography

- Approximately 1176 square miles in 373 tiles
- About 3.5 square miles in each tile
- Imagery in TIFF format
- 8-bit Natural Color Derivative and 8-bit CIR viewable in all ESRI products
- Natural Color is 23gb in TIFF format



Sample NIR from Enumclaw APD

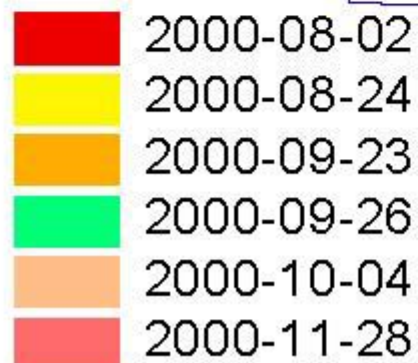
IKONOS

●Seattle

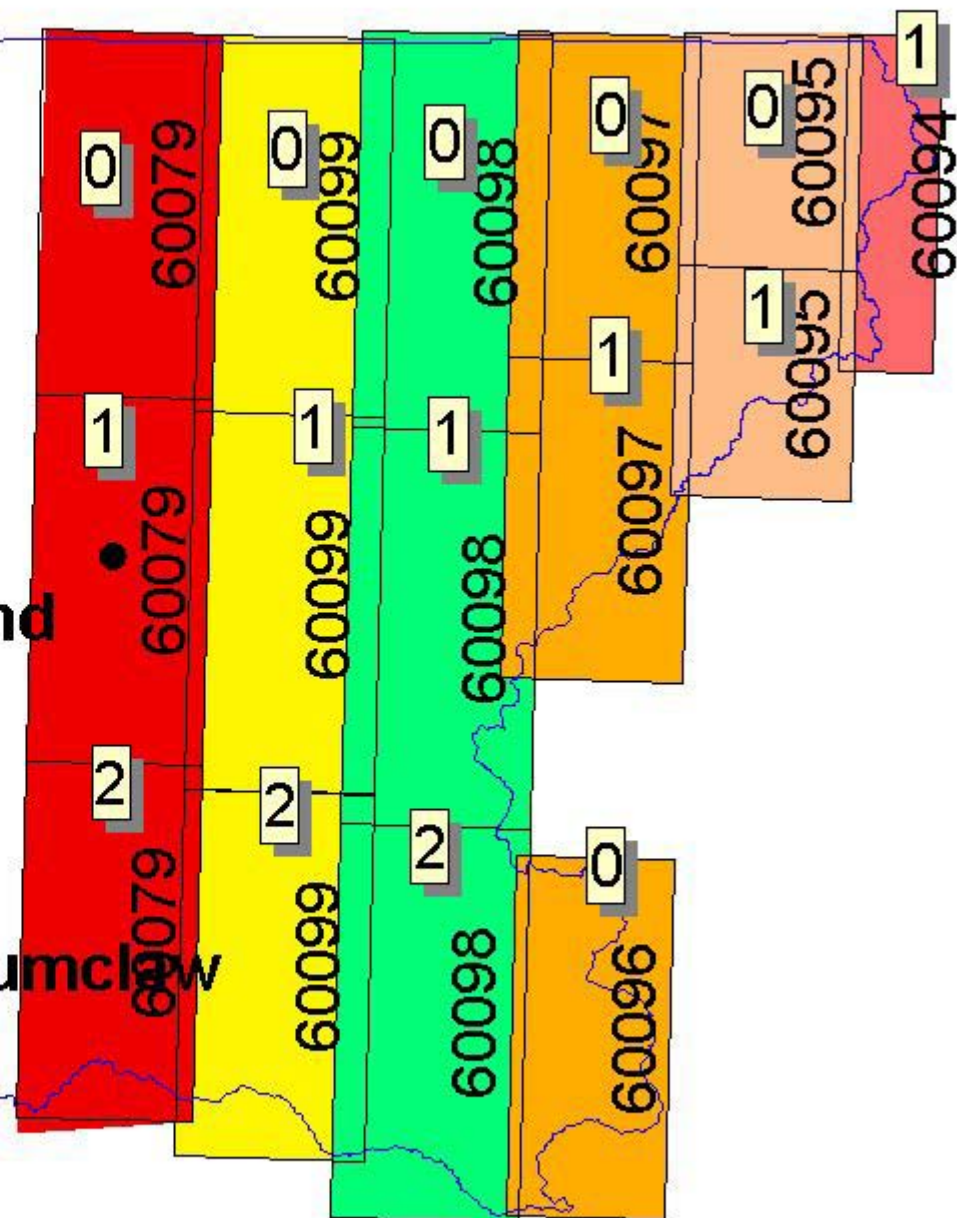
King County

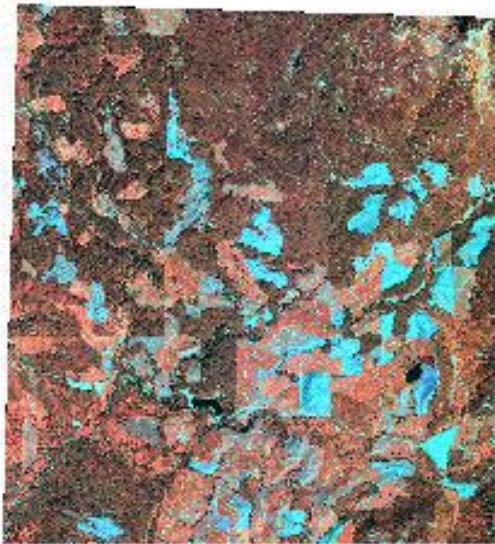
North Bend

Acquisition Dates



●Enumclaw

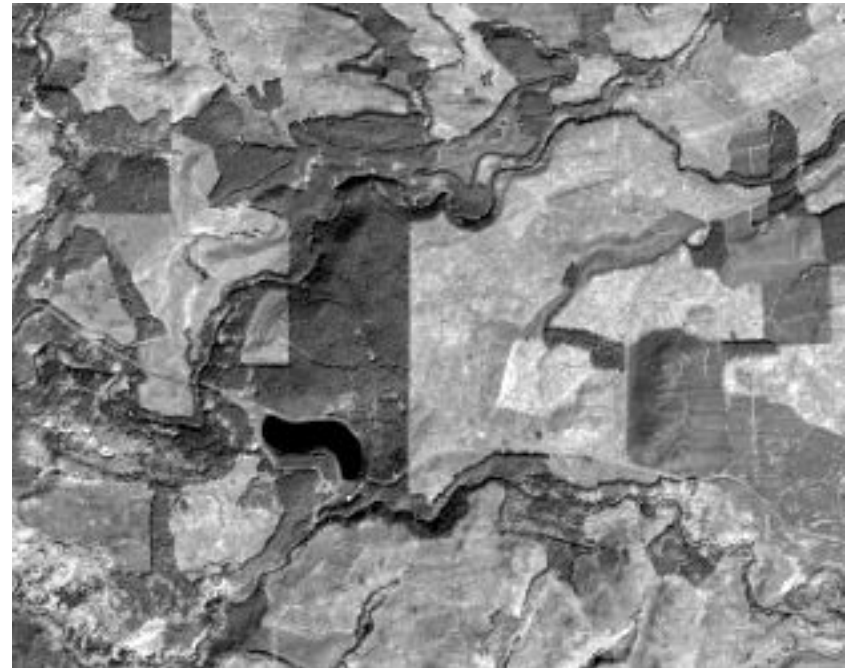




4-band stack False Color
NIR display (4m GSD)



3-band stack Natural Color Display
(4m GSD)



Single band 1m Panchromatic

Samples of **Ikonos** Imagery

- Approximately 1250 square miles in 30 tiles (still in post processing stage)
- Imagery delivered in separate bands/file in TIFF format.
- User products will be provided in IMG format
- 11-bit img format data will require ArcView 3.2a patch using standard IMG extension



Data Processing Details

DAIS

- Convert original 4-band 16-bit images to 8-bit natural color stack, using Space Imaging supplied application.
- TIFF images converted to IMG format for handling and display ease, defeat GEOTIFF header read conflict
- Some Natural Color images rebalanced for better display in GIS software

Emerge

- Original imagery reprojected and retiled using 'roving window' AML program
- Absence of blue band required application of algorithm created in AML from ERDAS routine to create Natural Color Derivative
- Overall image quality improved by applying display histogram slice to reduce some high-end spectral display

Ikonos

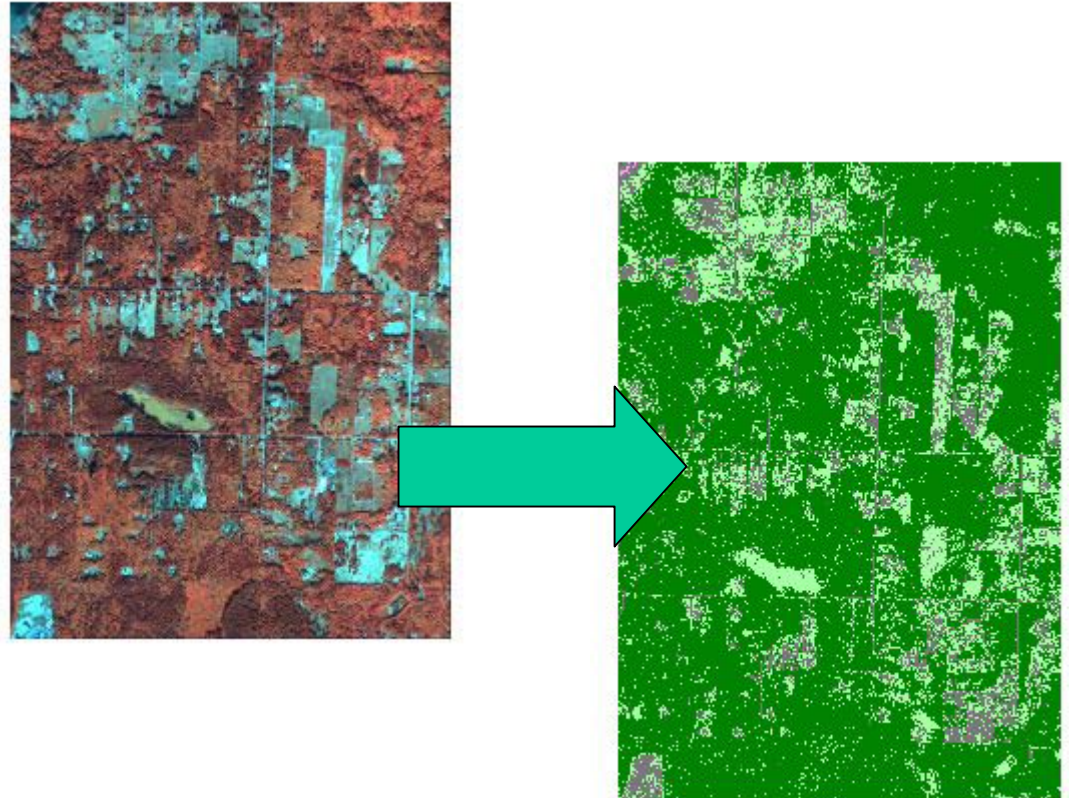
- Reprojection and retiling necessary, same as required for Emerge data
- Strong variation in Dynamic Range between collection swaths requires histogram balancing for better visual display
- Original data supplied in TIFF format by band, recompiled into 3 and 4 band combinations in IMG format.

Beyond multiple applications of data as background imagery for analysis and cartography, major focus of imagery is to create a Land Cover classification product

Contract will be let this Fiscal Year for a Phase I multiple category Land Classification Project

9 Class (category) to be determined

- Impervious- Constructed Surface
- Non-constructed, Non-vegetated
- Open Water
- Wet Areas
- Tree Canopy
- Herbaceous Vegetation
- Shrub
- Young Conifer Plantation
- Unknown/Unclassified



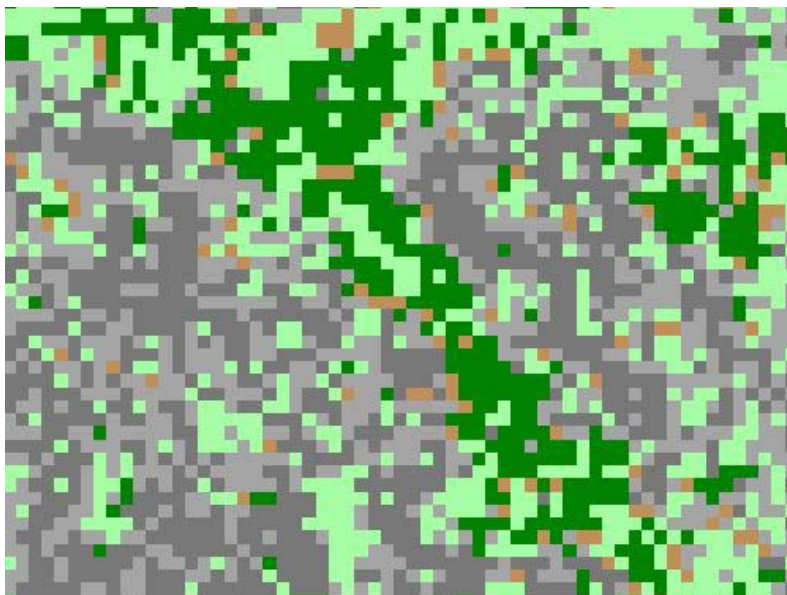
Product will provide improved spatial accuracy for actual areal extents of features. It will provide more accurate cumulative totals as compared to previous classification efforts on generally coarser data.



Emergent image of mixed urban and forest



Preliminary classification on NDVI breakout



Comparable area of PRISM 30 meter imagery
classified using simplified scheme

*Comparison of classification
potential of new multispectral
imagery vs existing 30 meter
Landsat imagery*

Status, Caveats and the rest of the fine print

STATUS

- Current availability limited to natural color DAIS and Emerge imagery will be expanded as Wildfire upgrade progresses and remaining post-processing is completed.
- Besides posting the natural color version of the Ikonos data, other versions of the data will be hosted from the same image library: False color CIR or full multispectral, MrSID compressed mosaics, and panchromatic band and possibly color pan-sharpened Ikonos data.
- Indexes, image catalogs and metadata are available and will be updated as new data is posted.
- Future enhancements include adding this imagery to the image picker in AvLib application

Caveats

- Data collected for general planning purposes and change analyses, and is not intended for use as a conflation base or where 'exacting' georeferencing is required.
- Data was collected over a protracted time period which must be carefully considered when using data for comparative vegetation analysis.
- Imagery was not processed for dynamic range adjustment to preserve spectral value integrity, therefore be aware of tonal imbalances due to this effect.

Access and Licensing

- Data is available for use by all authenticated King County GIS users and, within individual arrangements, vendors under contract with the County for purposes of the project's scope of work.
- Other data sharing arrangements are being developed with government entities within King County.